APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,240	01/30/2004	Xiaofan Lin	200309899-1	8162

22879   7590   07/30/2008
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EXAMINER
ZENATI, AMAL S

ART UNIT	PAPER NUMBER
2614	

NOTIFICATION DATE	DELIVERY MODE
07/30/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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		Application No.	Applicant(s)	
		10/769,240	LIN ET AL.	
	Office Action Summary	Examiner	Art Unit	
		AMAL ZENATI	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on <u>19 March 2008</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☐ Claim(s) <u>1-24</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-24</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some *   c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 08-06)   **Office Action Summary**   Part of Paper No./Mail Date 20080616

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set

forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for

establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or
         nonobviousness.

2.   **Claims 1-15, 22, and 24**, are rejected under 35 U.S.C. 103(a) as being unpatentable over **Das et**

al (US Patent # 6,847,714 B1; hereinafter Das) in view of Bala (US Patent # 6,798,876 B1).

         Consider **claims 1, 22, and 24, Das** clearly shows and discloses a method, a system, and a

computer-usable medium embodying computer program code for performing operator selection

comprising: initiating a dialog between a contact and a call handing system (speech sample) (col. 2, lines

55-58; and fig1, label 300); identifying a language variation spoken by the contact (identifying a language

variation of the contact's speech sample) (col. 2, lines 59-62; and fig. 2, label 304); determining a skill

level with respect to the language variation for each operator within a set of operators (col. 4, lines 3-13,

col. 3, lines 14-20; and fig. 2, labels: 306, 308) <u>following the initiation of the dialog between the contact</u>

<u>and the call handling system (</u>col. 3, lines 51-64; and fig. 2, labels: 300, 308); selecting an operator whose

skill level in the language variation is above a predetermined value (fig. 4, labels: 410, 414); and

transferring the dialog with the contact to the operator (col. 3, lines 25-31; and col.2, lines 17-20);

however, **Das** does not specifically disclose that <u>the skill level for each operator within the set of</u> <u>operators being determined on a real time basis while each operator is engaged in a dialog with a contact</u> <u>that has been transferred to that operator</u> .

In the same field of endeavor, **Bala** clearly discloses that <u>the skill level for each operator within</u> <u>the set of operators being determined on a real time basis while each operator is engaged in a dialog with</u> <u>a contact that has been transferred to that operator</u> (col. 6, lines 15-18)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to automatically updating operator profiles with information regarding both the caller and operator during the call as taught by Bala in Das et al, in order to achieve the best result for ranking the operator that can best meet the caller's need.

Consider **claims 5, 6, 7, and 8**, **Das and Bala** clearly show that selecting includes: selecting an operator with a highest skill level in the language variation (**Das**: col. 3, line 15-19); queuing the contact with a soon to be available operator with a highest skill level in the language variation (**Das**: col. 3, line 57-64); selecting an operator whose second language is equal to the language variation of the contact; selecting an operator whose cultural background is associated with the language variation of the contact (**Das**: col. 3, line 18-22).

Consider **claim 12, Das and Bala** clearly show that initiating includes: initiating dialog between the contact and an interactive voice response interface (**Das**: col. 1, line 44-46).

Consider **claims 13 and 14, Das and Bala** clearly show that the language variation is an accent variation; and the language variation is a dialect variation (**Das**: col. 1, line 58-62; col. 3, line 35-39; col. 8, claim 19).

Consider **claim 15, Das and Bala** clearly show that identifying includes; retrieving the contact's language variation from a contact database (**Das**: col. 6, line 26-27).

Consider **claims 2, Das and Bala** clearly show the method, wherein determining includes: the following: receiving a self rating from an operator regarding how difficult a dialog was with a contact who speaks the language variation; and updating the skill level of the operator using the self rating (**Bala:** col. 3, lines 25-28).

Consider **claim 3, Das and Bala** clearly show the method, wherein determining includes defining a set of dialog key words indicating communication difficulties; rating an operator based on how many of the key words the operator spoke in a dialog with a contact who speaks the language variation (**Bala:** col. 3, lines 53-57); and updating the skill level of the operator using the rating (**Bala:** col. 8, lines 4-7).

Consider **claim 4, Das and Bala** clearly show the method, wherein determining includes measuring a time an operator spent engaged in a dialog with a contact who speaks the language variation (**Bala:** col. 7, lines 10-11); counting a number of works spoken during the dialog with the contact who speaks the language variation; rating the operator based on the time spent and number of words spoken; and updating the skill level of the operator using the rating (**Bala:** col. 8, lines 27-33).

Consider **claim 9, Das and Bala** clearly show the method, further comprising: generating a report on all language variations spoken by contacts calling the call handling system (**Bala:** col. 8, lines 16-20);

Consider **claim 10, Das and Bala** clearly show the method, further comprising: generating a report on operator skill levels with respect to a predefined set of language variations (**Bala:** col. 8, lines 25-30).

Consider **claim 11, Das and Bala** clearly show the method, further comprising: generating a report on disparities between a number of contacts calling the call handling system and speaking a particular language variation and operators skilled in the particular language variation (**Bala:** col. 4, lines 50-64).

3.   Claims **16, 18, 20,** and **23** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Das et al (US Patent # 6,847,714 B1; hereinafter Das)** in view of **Bala (US Patent # 6,798,876 B1)** and further in view of **Bahler et al (US Patent # 4,896,358; hereinafter Bahler).**

As per claims 16, 18, 20, and 23, **Das and Bala** show the language and the accent of a contact is automatically determined from a speech sample of the party, and based on the accent the call is sent for servicing to a call-center agent (operator) who skilled in the determined accent.

However, **Das and Bala** do not specifically disclose that determining includes the following: generating a set of confidence scores indicating a likelihood that the contact speaks each language variation within a set of language variations; generating an inverse distance weighted confidence score for each of the language variations using the confidence score and an inversely weighted distance between the contact and each language variation; and associating a language variation with the contact if that language variation's inverse distance weighted confidence score is above a predetermined value (a highest variation's inverse distance weighted confidence score with the contact).

In the same field of endeavor, **Bahler** clearly discloses generating a score that indicates the likelihood for determining whether the speech contains a valid phrase or keyword as compared to an undesirable utterance (abstract, line 7-10); **Bahler** also discloses that the weighted distance is between the segment of speech under consideration (the contact) and a keyword template (language variation) (col. 7, line 3-27); comparing set of signals (contact) with keyword templates (language variation) and selecting the keyword template having the greatest statistical similarity set of signals (col. 7, line 45-48), Bahler discloses the above steps for the purpose of explaining the method of identifying the language and accent variation.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include and explain the method for recognize language variation as taught by Bahler in Das and Bala, in order to improve the technique of identifying language and accent variation.

4.   Claims 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Das et al (US Patent # 6,847,714 B1; hereinafter Das)** in view of **Bala (US Patent # 6,798,876 B1),** further in view of **Bahler**

et al (US Patent # 4,896,358; hereinafter Bahler) and further more in view of **Mitsa** (IEEE

Instrumentation)

Das, Bala, and **Bahler** disclose the claimed invention above but lack teaching of the details for

calculating the inverse distance weighted confidence score.

However, **Mitsa** disclose the calculation details for getting the value of inverse distance weighted

confidence score for the purpose of simplify the calculation when the data points is large such as language

variation and images; **Mitsa** clearly shows generating inverse distance weighted method in formula as in

equation (2) which shows selecting a first point (a first language variation) as a first origin;

calculating a distance between the first origin and each other points (other language variation);

normalizing these distances with respect to the first origin; multiplying each normalized distance

by its respective confidence score to generate a set of multiplied results; totaling the multiplied

results to yield an inverse-distance weighted confidence score for the first point (the first

language variation); selecting a second point (a second language variation) as a second origin;

and repeating the selecting, calculating, normalizing, multiplying, and totaling for the second

origin as I points (language variation) in the equation (2) takes the variable from 1 through n.

(Page 453)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the

invention was made to use the method of calculating the inverse distance weighted as taught by Mitsa in

Das and Bahler, in order to achieve the one advantage of inverse distance weighted methods which is

large number of variations available and be easily modified to meet the specific needs for using this

method in language and accent variation.

7.   **Claims 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Das et al (US Patent #

6,847,714 B1; hereinafter Das)** in view of **Bala (US Patent # 6,798,876 B1),** further in view **Bahler et**

al (US Patent # 4,896,358; hereinafter **Bahler)** and further more in view of **Gupta (US Patent #**

6,122,361)

Das, Bala, and **Bahler** disclose the claimed invention above but lack specifying the geographical

location (physical distance) as a distance that is relate to the user (contact) location.

However, **Gupta** discloses means for consider a geographical location of the user as a distance for

the purpose of getting valuable information that can be used as in conjunction with acoustical match

between the spoken utterance and orthographies in the speech recognition (col. 2, lines 55-67).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the

invention was made to use the geographical distance as taught by Gupta in Das, Bala, and Bahler, in order

to improve the accuracy of the speech recognition.

8.   **Claims 21** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Das et al (US Patent #**

6,847,714 B1; hereinafter Das) in view of **Bala (US Patent # 6,798,876 B1),** and further in view of

Bahler et al (US Patent # 4,896,358; hereinafter Bahler).

Das and Bala disclose the claimed invention 1 as explained above but lack the teaching of

claimed invention 16 as explained above.

However, **Bahler** discloses the claimed invention 16 as explained above for the purpose of

applying the specific technique such as generating an inverse distance weighted confidence score to an

automatic speech recognition system for better functioning.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the

invention was made to use these technique as taught by Bahler in Das and Bala, in order to accomplish a

better performance for automatic speech recognition system.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amal Zenati whose telephone number is **571-270-1947**. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on 571- 272- 7499. The fax phone number for the organization where this application or proceeding is assigned is 571- 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner Amal Zenati
AU 2614, /Amal Zenati/

June 16, 2008
/Curtis Kuntz/
Supervisory Patent Examiner, Art Unit 2614